

IC20 FastPCT/PD 08 NOV 2005
Claims 1, 19 and 36

(as amended during Chapter II procedure)

5 1. A process for the treatment of at least one particle (10 - 14) with at least one reaction liquid (20, 21) in a main channel (30) of a fluidic microsystem (100), with the steps:

- movement of the at least one particle (10 - 14) with a carrier liquid (40) flowing in a longitudinal direction of the main channel (30) up to a holding device (50, 52, 57),
- at least a temporary holding of the at least one particle (10 - 14) under the action of a holding force exerted by the holding device (50, 52, 57), and
- supplying of the reaction liquid (20, 21) from at least one lateral channel (31, 36) into the main channel (30) so that the at least one held particle (10 - 14) is rinsed by the reaction liquid (20, 21), wherein
- the holding device (50, 52, 57) is arranged downstream after a mouth (32, 37) of the lateral channel (31, 36) in the main channel (30) and the reaction liquid (20, 21) flowing through the holding device (50, 52, 57) with a direction of flow running in the longitudinal direction of the main channel (30)

characterized in that

25 - the holding of the at least one particle (10 - 14) comprises a contactless fixing with a holding force acting in a contactless manner.

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19. A fluidic microsystem (100), especially for the treatment of at least one particle (10-14) suspended in a carrier liquid (40), which comprises:

- a main channel (30) adapted to receive a flow of the carrier liquid (40) and to which a lateral channel (31, 36) for supplying a reaction liquid (20, 21) is connected at least one mouth (32, 37), and

5 - a holding device (50, 52, 57) adapted to hold at least temporarily the at least one particle (10-14), wherein

- the main channel (30) is adapted to receive a flow of the reaction liquid (20, 21) that flows with a direction of flow running in the longitudinal direction of the main channel

10 (30) through the holding device (50, 52, 57), and

- the holding device (50, 52, 57) is arranged downstream after the mouth (32, 37) of the lateral channel (31, 36),
characterized in that
 - the holding device (50, 52, 57) is adapted for a contactless fixing of the at least one particle (10 - 14).

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36. An electrode arrangement (52) for the contactless holding of suspended particles in a channel of a fluidic microsystem, which arrangement comprises at least three pairs of electrodes (53, 54, 55), the electrodes (53, 54, 55) being respectively arranged on bottom surfaces and cover surfaces of the channel and each comprising a central electrode (53) and 25 two lateral electrodes (54, 55), the central electrodes (53) being adapted to form a dielectrical field barrier transversely to a direction of flow (A) in the channel when loaded with a high-frequency alternating voltage, and the lateral electrodes (54, 55) being arranged in front of the central electrode (53), relative to the direction of flow (A).